IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) A method including:

measuring a subinterval of a patient's cardiac cycle ~~correlative~~ to obtain a hemodynamic maximum rate indicator; and

establishing a maximum atrial tracking rate based at least in part on the hemodynamic maximum rate indicator.

2. (Original) The method of claim 1, in which measuring the subinterval includes:

detecting a portion of a QRS complex;

detecting an indication of an aortic valve closure; and

measuring an indication of a time interval between the detected QRS complex and the detected aortic valve closure.

3. (Original) The method of claim 2, in which detecting an indication of an aortic valve closure includes detecting an acceleration fiducial correlative to the aortic valve closure.

4. (Original) The method of claim 3, in which detecting the acceleration fiducial includes detecting an S2 heart sound.

5. (Original) The method of claim **4**, in which measuring the indication of the time interval between the detected QRS complex and the detected aortic valve closure includes:

converting a measured time interval between the detected QRS complex and the S2 heart sound into a heart rate; and

adding a rate offset thereto to obtain the indication of the time interval between the detected QRS complex and the detected aortic valve closure.

6. (Original) The method of claim **1**, in which establishing the maximum atrial tracking rate includes:

providing a base value of the maximum atrial tracking rate;

detecting a present activity level of the patient;

detecting a maximum activity level over a period of time; and

computing the maximum atrial tracking rate by scaling a difference between the hemodynamic maximum rate indicator and the base value of the maximum atrial tracking rate by a ratio of the present activity level to the maximum activity level, and adding the scaled difference to the base value of the maximum atrial tracking rate to establish the maximum atrial tracking rate.

7. (Original) The method of claim **1**, further including:

providing a first tachyarrhythmia therapy rate threshold; and

adjusting the first tachyarrhythmia therapy rate threshold when the maximum atrial tracking rate exceeds the first tachyarrhythmia therapy rate threshold.

8. (Original) The method of claim **7**, in which adjusting the first tachyarrhythmia therapy rate threshold includes substantially equating the first tachyarrhythmia therapy rate threshold to the maximum atrial tracking rate when the maximum atrial tracking rate exceeds the first tachyarrhythmia therapy rate threshold.

9. (Original) The method of claim **1**, in which measuring the subinterval of the patient's cardiac cycle correlative to the hemodynamic maximum rate indicator is carried out at a plurality of heart rates to create a correlation between heart rate and the hemodynamic maximum rate indicator.

10. (Original) The method of claim **9**, in which establishing the maximum atrial tracking rate is based at least in part on the correlation between heart rate and the hemodynamic maximum rate indicator.

11. (Original) The method of claim **1**, further including adjusting a criteria for providing an antitachyarrhythmia therapy based on the established maximum atrial tracking rate.

12. (Original) The method of claim **11**, further including increasing a rate threshold for providing an antitachyarrhythmia therapy to a value that is greater than or equal to the established maximum atrial tracking rate.

13. (Original) The method of claim **12**, further including increasing a lower rate threshold for a lower antitachyarrhythmia therapy zone to a value that is greater than or equal to the established maximum atrial tracking rate.

14. (Original) The method of claim **1**, in which establishing the maximum atrial tracking rate includes calculating the maximum atrial tracking rate (MATR) as: MATR = Default MATR + (HMR - Default MATR)•(AL/MAL), where Default MATR is a previously programmed value, HMR is a hemodynamic maximum rate based at least in part on the time interval between the QRS complex and the fiducial, AL is the patient activity level, and MAL is a maximum value of the patient activity level over a preceding time period.

15. (Original) The method of claim **1**, in which measuring the subinterval includes:

detecting a portion of a QRS complex;

detecting a heart impedance including variations corresponding to heart contractions;

detecting a time associated with a maximum slope of the heart impedance; and

measuring an active time interval between the detected QRS complex and the time associated with the maximum slope of the heart impedance occurring during the same cardiac cycle as the detected QRS complex.

16. (Original) The method of claim **15**, in which establishing the maximum atrial tracing rate includes using a rate corresponding to the active time interval.

17-28. (Cancelled)

29. (Currently Amended) A system including:

means for measuring a subinterval of a patient's cardiac cycle ~~correlative~~ to obtain a hemodynamic maximum rate indicator; and

means for establishing a maximum atrial tracking rate based at least in part on the hemodynamic maximum rate indicator.

30. (Previously Presented) The system of claim **29**, in which the means for measuring the subinterval includes:

means for detecting a portion of a QRS complex;

means for detecting an indication of an aortic valve closure; and

means for measuring an indication of a time interval between the detected QRS complex and the detected aortic valve closure.

31. (Previously Presented) The system of claim **30**, in which the means for detecting an indication of an aortic valve closure includes means for detecting an acceleration fiducial correlative to the aortic valve closure.

32. (Previously Presented) The system of claim **31**, in which the means for detecting the acceleration fiducial includes means for detecting an S2 heart sound.

33. (Previously Presented) The system of claim **32**, in which the means for measuring the indication of the time interval between the detected QRS complex and the detected aortic valve closure includes:

means for converting a measured time interval between the detected QRS complex and the S2 heart sound into a heart rate; and

means for adding a rate offset thereto to obtain the indication of the time interval between the detected QRS complex and the detected aortic valve closure.

34. (Previously Presented) The system of claim **29**, in which the means for establishing the maximum atrial tracking rate includes:

means for providing a base value of the maximum atrial tracking rate;

means for detecting a present activity level of the patient;

means for detecting a maximum activity level over a period of time; and

means for computing the maximum atrial tracking rate by scaling a difference between the hemodynamic maximum rate indicator and the base value of the maximum atrial tracking rate by a ratio of the present activity level to the maximum activity level, and adding the scaled difference to the base value of the maximum atrial tracking rate to establish the maximum atrial tracking rate.

35. (Previously Presented) The system of claim **29**, further including:

means for providing a first tachyarrhythmia therapy rate threshold; and

means for adjusting the first tachyarrhythmia therapy rate threshold when the maximum atrial tracking rate exceeds the first tachyarrhythmia therapy rate threshold.

36. (Previously Presented) The system of claim **35**, in which the means for adjusting the first tachyarrhythmia therapy rate threshold includes means for substantially equating the first tachyarrhythmia therapy rate threshold to the maximum atrial tracking rate when the maximum atrial tracking rate exceeds the first tachyarrhythmia therapy rate threshold.

37. (Previously Presented) The system of claim **29**, in which the means for measuring the subinterval of the patient's cardiac cycle correlative to the hemodynamic maximum rate indicator includes means for carrying out the measuring at a plurality of heart rates to create a correlation between heart rate and the hemodynamic maximum rate indicator.

38. (Previously Presented) The system of claim **37**, in which means for establishing the maximum atrial tracking rate includes means for establishing the maximum atrial tracking rate based at least in part on the correlation between heart rate and the hemodynamic maximum rate indicator.

39. (Previously Presented) The system of claim **29**, further including means for adjusting a criteria for providing an antitachyarrhythmia therapy based on the established maximum atrial tracking rate.

40. (Previously Presented) The system of claim **39**, further including means for increasing a rate threshold for providing an antitachyarrhythmia therapy to a value that is greater than or equal to the established maximum atrial tracking rate.

41. (Previously Presented) The system of claim **40**, further including means for increasing a lower rate threshold for a lower antitachyarrhythmia therapy zone to a value that is greater than or equal to the established maximum atrial tracking rate.

42. (Previously Presented) The system of claim **29**, in which establishing the maximum atrial tracking rate includes calculating the maximum atrial tracking rate (MATR) as: MATR = Default MATR + (HMR - Default MATR)•(AL/MAL), where Default MATR is a previously programmed value, HMR is a hemodynamic maximum rate based at least in part on the time interval between the QRS complex and the fiducial, AL is the patient activity level, and MAL is a maximum value of the patient activity level over a preceding time period.